REMARKS

Favorable reconsideration is respectfully requested in view of the foregoing amendments and following remarks.

Claims 2 and 4-6 have been amended as suggested by the Examiner in item 1 on page 2 of the Action.

The objection to these claims on the basis of the recited informalities is deemed to be overcome by these amendments.

Claims 12 and 13 have been amended to include a period at the end of the claims.

Accordingly, the objection to these claims on the basis of these informalities is deemed to be overcome.

Claim 1 has been amended as kindly suggested by the Examiner with respect to section (A) and (B). Section (D) has been amended along the lines suggested by the Examiner except that compound (D-1) has been defined as being an organocyclic silicone compound having 3 to 8 silicone atoms per molecule, based upon the specification at page 11, lines 18-19.

In view of the foregoing, the objection to claims 1-13 on the basis of the informalities noted in item 3 are deemed to be overcome.

The drawings were objected to on the basis that reference number 10 in Figure 5 is not described in the specification. There is submitted herewith a proposed drawing revision, which deletes the reference number 10 from Figure 5.

Accordingly, the objection to the drawings is deemed to be overcome. Upon the Examiner's approval, a formal revised drawing will be submitted.

Claims 1-13 were rejected under 35 USC 112, first paragraph, on the basis that the specification does not describe whether the molecular weight of components (A) and (B) are a number average molecular weight or weight average molecular weight. This ground of rejection is respectfully traversed.

The specification at page 9, lines 14-34 describe the specific molecular weights of various examples of component (D-1). The specification at page 10, lines 17-32 describe the specific molecular weights of various examples of component (D-2).

One skilled in the art would be capable of easily determining based upon these examples that the molecular weight range referred to in the claims is a number average molecular weight.

Accordingly, reconsideration and withdrawal of this ground of rejection is respectfully solicited.

Similarly, the objection to the specification set forth in item 7 on page 4 of the Action is respectfully submitted to be untenable and should be withdrawn.

Claims 1-7 were rejected under 35 USC 102(e) as being anticipated by, or in the alternative, under 35 USC 103 as obvious over Fehn et al. This ground of rejection is respectfully traversed.

Claim 1 has been amended to more particularly point out and distinctly claim the component (D-1).

Fehn et al. fail to disclose an adhesive composition including a organocyclic silicon compound (D-1) according to claim 1 as amended.

Accordingly, it is respectfully submitted that the 102 rejection is overcome.

It is also respectfully submitted that the claimed invention as amended is patentably distinct and nonobvious over the teachings of the cited reference. As discussed in the specification, the adhesive composition of the invention is excellent in heat resistance. Please see for example, page, 2, lines 21-22. The heat resistance of the claimed composition is unexpectedly superior to the closest adhesive composition of the cited reference. The inventors have conducted an experimental comparison of the adhesive compositions of Examples 1 and 3-5 of the present application, and the adhesive composition of Example 6 of the cited reference. The results of the comparison are shown in the attached Rule 132 Declaration. The Declaration establishes that the adhesive composition of the claimed invention is unexpectedly superior in high heat resistance compared to the adhesive composition of the cited reference.

Accordingly, it is respectfully submitted that the claims as amended are patentably distinct and nonobvious from the teachings of the cited reference.

Claims 8-13 were also rejected under 35 USC 103 as being unpatentable over Fehn et al. in view or Suzuki et al. Since these claims are dependent upon the adhesive composition

according to claim 1, this ground of rejection is deemed to be overcome for the reasons described above.

Attached hereto is a marked-up version of the changes made to the claims by the current amendment. The attached pages are captioned "**Version with markings to show changes made**."

Favorable reconsideration and allowance is respectfully solicited.

Respectfully submitted,

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CLAIMS

(Amended)

1. An adhesive composition comprising the following components:

(A) an organopolysiloxane having two alkenyl groups ~~with 4 or less carbon atoms bonded to silicon atom in one~~ per molecule, wherein said alkenyl groups contain 1 to 4 carbon atoms, and wherein said alkenyl groups are directly bonded to silicon atoms and a molecular weight of 1,000 or more;

(B) an organohydrogenpolysiloxane having at least two ~~hydrogen atoms bonded to silicone atom in one~~ Si-H bonds per molecule and a molecular weight of 1,000 or more;

(C) a platinum-based catalyst; and

(D) at least one selected from the group consisting of an ~~organic~~ organocyclic silicon compound (D-1) having at least three alkenyl groups ~~with 4 or less carbon atoms bonded to silicon atom in one~~ and 3 to 8 silicon atoms per molecule and a molecular weight of less than 1,000; and an organic cyclic silicon compound (D-2) having at least three ~~hydrogen atoms bonded to silicon atom in one~~ Si-H bonds per molecule and a molecular weight of less than 1,200.

(Amended) 2. The adhesive composition of claim 1, wherein the number of hydrogen atoms contained in the component (B) and the component (D-2) when present is 0.4 to 6.0 times the total number of alkenyl groups contained in the component (A) and alkenyl groups contained in the component (D-1) when present, the component (C) is contained in an amount of 10 to 1,000 ppm based on the total weight of the components (A), (B) and (D), and the component (D) is contained in an amount of 0.1 to 40 wt% based on the total weight of the components (A) and (B).

3. The adhesive composition of claim 1 or 2, wherein the component (D) is an oligomer having 3 to 8 silicon atoms.

4. The adhesive composition of claim 1 or 2, wherein the component (D-1) is selected from the group consisting of

and the component (D-2) is 1,3,5,7-tetraethylcyclotetrasiloxane or 1,3,5,7-tetramethylcyclotetrasiloxane.

7. The adhesive composition of claim 1, wherein the component (A) has a viscosity of 100 to 250,000 cS at 25°C.

(Amended) 8. An optical device comprising two or more ~~constructed by bonding~~ optical parts bonded with ~~by~~ the adhesive composition of claim 1.

9. The optical device of claim 8, wherein the optical parts are optical fibers, lenses, filters, optical waveguides, diffraction gratings or optically active elements.

10. The optical device of claim 8 or 9, wherein the optical parts are made from glass, plastics, metals or organic-inorganic composite materials.

(Amended) 11. An optical device constructed by bonding at least two optically transparent optical parts with ~~by~~ an optically transparent adhesive layer formed by curing the adhesive composition of claim 1, wherein the value of refractive index of the adhesive layer is ~~was~~ adjusted to approximate ~~to~~ the values of refractive index of the at least two optically transparent optical parts.

(Amended) 12. The optical device of claim 11, wherein when the refractive indices of the two adjacent optical parts are represented by n_1 and n_2 ($n_1 \geqq n_2$), the adhesive layer between the adjacent optical parts has a refractive index n_3 represented by the following expression~~(1)~~:

$$\sqrt{(n_1 \cdot n_2)} - ((\sqrt{(n_1 \cdot n_2)} - n_2)/3) - 0.05 \leqq n_3 \leqq \sqrt{(n_1 \cdot n_2)} + ((n_1 - \sqrt{(n_1 \cdot n_2)})/3) + 0.05 .$$

~~...(1)~~

(Amended)

13. The optical device of claim 11, wherein when the refractive indices of the two adjacent optical parts are represented by n_1 and n_2 ($n_1 \geqq n_2$), the adhesive layer between the adjacent optical parts has a refractive index n_3 represented by the following expression ~~(2)~~:

$$\sqrt{(n_1 \cdot n_2)} - ((\sqrt{(n_1 \cdot n_2)} - n_2)/4) - 0.03 \leqq n_3 \leqq \sqrt{(n_1 \cdot n_2)} + ((n_1 - \sqrt{(n_1 \cdot n_2)})/4) + 0.03, \quad \cdots (2)$$

Version with Markings to Show Changes Made

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of :

Koichiro NAKAMURA et al. : **Attn: APPLICATION BRANCH**

Serial No. NEW : **Docket No. 2001_1477A**

Filed September 27, 2001 :

ADHESIVE COMPOSITION AND OPTICAL DEVICE USING THE SAME

PRELIMINARY AMENDMENT

Assistant Commissioner for Patents,
Washington, DC 20231
Sir:

Prior to calculating the filing fee, please amend the application as follows:

IN THE SPECIFICATION

Page 1, immediately after the title, please insert:

This application claims the benefit of U.S. provisional application 60/236,366 filed September 29, 2000.

IN THE CLAIMS

Please amend the claims as follows:

3. **(Amended)** The adhesive composition of claim 1, wherein the component (D) is an oligomer having 3 to 8 silicon atoms.

4. **(Amended)** The adhesive composition of claim 1, wherein the component (D-1) is selected from the group consisting of

~~boronvinyldimethylsiloxide, hexavinyldisiloxane,~~
~~methacryloxypropyltris(vinyldimethylsiloxy)silane,~~
~~octavinyl-T8-silsesquioxane,~~
pentavinylpentamethylcyclopentasiloxane,
~~tetraallyloxysilane, tetraallylsilane,~~
~~tetrakis(2-methacryloxyethoxy)silane,~~
~~tetrakis(vinyldimethylsiloxy)silane,~~
~~1,1,3,3-tetravinyldimethyldisiloxane, tetravinylsilane,~~
1,3,5,7-tetravinyl-1,3,5,7-tetramethylcyclotetrasilazane,
1,3,5,7-tetravinyl-1,3,5,7-tetramethylcyclotetrasiloxane,
~~tris(vinyldimethylsiloxy)methylsilane,~~
~~tris(vinyldimethylsiloxy)phenylsilane,~~
~~trivinylchlorosilane, trivinylethoxysilane,~~
~~trivinylmethoxysilane, trivinylmethylsilane,~~
~~1,3,5-trivinyl-1,1,3,5,5-pentamethyltrisiloxane,~~
~~trivinylsilane;~~
1,3,5-trivinyl-1,3,5-trimethylcyclotrisilazane and
1,3,5-trivinyl-1,3,5-trimethylcyclotrisiloxane.

5. **(Amended)** The adhesive composition of claim 1, wherein the component (D-2) is selected from the group consisting of

hydro-T8-silsesquioxane,
octakis(dimethylsiloxy)-T8-silsesquioxane,
methylhydrocyclosiloxane, pentamethylcyclopentasiloxane,
phenylhydrocyclosiloxane,
1,3,5,7-tetramethylcyclotetrasiloxane,
1,3,5,7-tetraethylcyclotetrasiloxane and
1,3,5,7-tetraethyl-2,4,6,8-tetramethylcyclotetrasilazane.

6. **(Amended)** The adhesive composition of claim 1, wherein the component (D-1) is 1,3,5-trivinyl-1,3,5-trimethylcyclotrisiloxane or 1,3,5,7-tetravinyl-1,3,5,7-tetramethylcyclotetrasiloxane and the component (D-2) is 1,3,5,7-tetraethylcyclotetrasiloxane or 1,3,5,7-tetramethylcyclotetrasiloxane.

10. **(Amended)** The optical device of claim 8, wherein the optical parts are made from glass, plastics, metals or organic-inorganic composite materials.